

Appendix E

Civilian and Commercial Imagery Office

1. Introduction

The USACE's Engineer Research and Development Center's (ERDC) - Topographic Engineering Center (TEC) is responsible for monitoring the acquisition of commercial satellite imagery acquisition Army-wide. TEC's Imagery Office (TIO) maintains a program, established in 1990, dedicated to the efficient research, acquisition, archiving, and distribution of both current and historical imagery and related products for the U.S. Army and other customers. The TIO researches available archives, both government and satellite vendors, places orders, manages funding when needed, tracks acquisition, and distributes data to the customer. The TIO additionally ensures data is stored in the National Imagery and Mapping Agency's (NIMA) Commercial Satellite Imagery Library (CSIL), which enables all of the DoD and Title 50 Intelligence community to have access to the data, providing the correct licensing has been purchased. If the imagery is in the CSIL, any Corps activity and their contractor(s) may access it at no cost from NIMA. The Title 50 community consists of: the Office of the Director of Central Intelligence, Central Intelligence Agency, National Security Agency, Defense Intelligence Agency, NIMA, the National Reconnaissance Office, other offices within the DoD for the collection of specialized national intelligence through reconnaissance programs; intelligence elements of the Services, the Federal Bureau of Investigation, the Department of Treasury, the Department of Energy, Bureau of Intelligence and Research of the Department of State; such elements of any other department or agency as may be designated by the President, or designated jointly by the Director of Central Intelligence and the head of the department or agency concerned, as an element of the intelligence community.

TEC was designated by the Office of the Assistant Chief of Engineers in 1990 to act as the U.S. Army Commercial & Civil Imagery (C2I) Acquisition Program Manager. This action was designed to preclude Army agencies/organizations from duplicating commercial and civil imagery purchases. In addition, TEC was designated the repository of selected commercial satellite imagery data pertaining to terrain analysis and water resources operations worldwide. This repository contains information to support worldwide military applications and operations. TEC executes the Commercial Imagery Program for TEC and the Army. The current revision of Army Regulation 115-11, Geospatial Information and Services, strengthens the role of TEC's TIO as the point of contact for acquisition of commercial satellite imagery in the Army.

2. Development of the TIO

The TIO began in 1990 with a single person's focus on educating the soldier on the availability, uses and types of commercial satellite imagery. As Army use of commercial satellite imagery increased and as the number of satellites increased, the TIO has grown to keep up with the demand. Currently the operation of the TIO provides thousands of dollars of imagery support to its customers, and the TIO is an active participant in NIMA's Commercial Imagery Strategy.

3. How to Order Commercial Satellite Imagery

USACE commands are required to coordinate with TIO prior to purchasing satellite imagery from a commercial vendor without first coordinating with the TIO. Any USACE organization with commercial satellite imagery requirements must forward their commercial satellite imagery requirements to TEC for research, acquisition, and distribution of the data.

Requests for commercial satellite imagery data can be submitted as follows:

TIO@tec.army.mil
Telephone 703-428-6909
FAX 703-428-8176
Online Request Form
www.tec.army.mil/forms/csiform1.html

and should include the following information:

- Geographic area of interest (Please provide Upper Left and Lower Right coordinates, Ex: 27 00 00N 087 00 00W) (and path/row, if known)
- Acceptable date range for data coverage (example: 5 Jan 99 - 3 Mar 00);
- Cloud cover and quality restrictions (example: less than 10% cloud cover, no haze, 10-degrees off nadir)
- Satellite system/sensor
See the following link for basic satellite information:
www.tec.army.mil/TIO/satlink.htm
- Desired end product (digital or hard copy and preferred media type, e.g., CD-ROM)
- Point of contact, mailing and electronic address and telephone number

4. Purchased Commercial Satellite Imagery Submission to the CSIL

Commercial satellite imagery purchased for customers by the TIO is disseminated upon receipt to the requestor as well as to the CSIL. This provides data access for DoD/Title 50 users.

5. Frequency of Imagery Collection

Frequency of imagery collection is driven by various options. Cloud cover, revisit time, and angle of collection (i.e. viewing angle or look angle) are several examples of variations in frequency of imagery collection. For example, change detection requires data from different collection dates, whether that is days, weeks, months or years. The change detection product quantifies alterations in land use and land cover. For more details, refer to www.tec.army.mil/TIO/satlink.htm

Several vendors rely on foreign ground stations to obtain data; however, NIMA is striving for imagery receipt within 24 hours of acquisition.

Sensor Availability

Commercial satellite imagery users have a sizable number of data choices obtainable for their use. The United States has Landsat 7 as well as other instruments associated with the Earth Observing Program (EOS) with data currently available for use/purchase. For a complete list of available sensors and their capabilities and benefits, refer to: www.tec.army.mil/TIO/satlink.htm

Possible Civil Applications

Commercial satellite imagery, such as Space Imaging's IKONOS, as well as the three other U.S. systems preparing to launch in the 2001/2002 window (Orbimage's Orbview-3 & Orbview-4 and EarthWatch's Quickbird) require no special permission for use. There is a possibility for utilizing commercial satellite imagery to provide aid after natural disasters since there are no restrictions or sensitivities affecting product distribution, given proper licensing is purchased. The high frequency of repeat coverage is a useful tool within the Corps and the Army.

Commercial imagery provides a backdrop for GIS vector data and provides a tool for facilities management, remediation, flood plain management, and erosion and sedimentation studies. Commercial imagery can be useful in planning, managing, and the inventorying of natural resources in the Corps. Flood control efforts in the Corps and Army can utilize commercial satellite imagery for accurately capturing flood boundaries, tracking erosion/levee damage, documenting levee repairs, providing model validation, and providing a graphic context.

Commercial satellite imagery can also be used as a tool to aid in the determination of severe, moderate and light damage zones, impassable roads, damage model input, debris estimation, ice and water distribution, roofing, change detection, and damage to critical facilities and infrastructure, such as bridges, power plants, and power transmission towers.